RADIOMARINE CORPORATION OF AMERICA
75 Varick Street, New York, N.Y.

DAG/as
8-54

MODIFICATION INSTRUCTIONS
for
RADIO TRANSMITTING SET
AN/FRT-15
using
RM-194 FIELD MODIFICATION KIT

1. PURPOSE:

The RM-194 is a Field Modification Kit for modifying the Radio Transmitting Set AN/FRT-15. It is used to provide additional protection for technical personnel and equipment from dangerous high voltage by shorting the dc side of the high voltage rectifiers to ground. This is performed automatically by plunger type HV shorting switches which are actuated when doors are opened or panels removed for servicing. The Modification Kit includes necessary switches, mounting brackets, interconnecting cables and hardware as listed on Radiomarine Drawing D-50196.

2. INSTALLATION PROCEDURE:

Step #1. Set MAIN LINE circuit breaker in OFF position. Discharge all filter capacitors using grounding rod.

Step #2. Mount one interlock switch in each of the positions shown on Dwg. D-50196. Use a No. 16 drill for mounting holes. Remove paint under all screw heads to provide good ground connections. Secure tightly all screws, flat washers, lockwashers and nuts.

Step #3. Drill mounting holes in doors to fit bumpers as shown in Details #2 and #3 of Dwg. D-50196.

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RADIO TRANSMITTING SET
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using
RM-194 FIELD MODIFICATION KIT

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2. INSTALLATION PROCEDURE:

Step #1. Set MAIN LINE circuit breaker in OFF position. Discharge all filter capacitors using grounding rod.

Step #2. Mount one interlock switch in each of the positions shown on Dwg. D-50196. Use a No. 16 drill for mounting holes. Remove paint under all screw heads to provide good ground connections. Secure tightly all screws, flat washers, lockwashers and nuts.

Step #3. Drill mounting holes in doors to fit plunger as shown in Details #2 and #3 of Dwg. D-50196.

2. INSTALLATION PROCEDURE (con't)

Step #4. Drill and tap holes to install mounting cleats. See Section A-A and Section B-B of Drawing D-50196.

NOTE

The kit contains three mounting cleats for holding the various cables in place. One cleat is located inside the Radio Transmitting Group, another inside the Radio Modulator Group and the third inside the Power Supply Group at the top.

Step #5 Connect all interconnecting cables as shown in drawing D-50196.

NOTE

The High Voltage wire is used in the 4000 volt circuit. This wire is colored white with a red tracer. The red wire is used in the 500 volt circuit.

Step #6. All interconnection cables are terminated with terminal lugs except Item No. 18 on Dwg. D-50196. Solder the tinned end of this wire to terminal No. 34 on terminal board TB-3003.

Step #7. Install the three mounting cleats.

Step #8. Check installation with an Ohmmeter as follows:

(a) Push open both HV shorting switches located in the Radio Transmitter Group. See Section D-D.

(b) Measure the resistance between ground and terminal No. 34 of terminal board TB-3003. This reading should be approximately 7500 ohms.

3. INSTALLATION PROCEDURE (cont'd)

Step #4. Drill end tap holes to install mounting cleats. See Section A-A and Section B-B of Drawing D-50196.

NOTE

The kit contains three mounting cleats for holding the various cables in place. One cleat is located inside the Radio Transmitting Group, another inside the Radio Modulator Group and the third inside the Power Supply Group at the top.

Step #5. Connect all interconnecting cables as shown in drawing D-50196.

NOTE

The High Voltage wire is used in the 4000 volt circuit. This wire is colored white with a red tracer. The red wire is used in the 500 volt circuit.

Step #6. All interconnection cables are terminated with terminal lugs except Item No. 18 on Dwg. D-50196. Solder the tinned end of this wire to terminal No. 34 on terminal board TB-3003.

Step #7. Install the three mounting cleats.

Step #8. Check installation with an Ohmmeter as follows:

(a) Push open both HV shorting switches located in the Radio Transmitter Group. See Section D-D.

(b) Measure the resistance between ground and terminal No. 34 of terminal board TB-3003. This reading should be approximately 7500 ohms.

2. INSTALLATION PROCEDURE. (con't)

(c) Release switches one at a time and check that Ohmmeter reads zero.

(d) Push open both HV shorting switches located in the Radio Modulator Group.

(e) Measure the resistance between ground and terminal No. 24 of terminal board TB-1502. This reading should be approximately 7000 ohms.

(f) Repeat part (c) above.

(g) Push open both shorting switches located inside the Power Supply Group at the top.

(h) Measure the resistance between ground and the bottom side of resistor R-2608. This reading should be approximately 83,000 ohms.

(i) Measure the resistance between ground and meter connection M-2702. This reading should be approximately 8000 ohms.

(j) Repeat part (c) above.

Step #9. Open all doors and remove rectifier shield panel. All shorting switches are now closed. With Ohmmeter check all connections for continuity.

This completes the installation of the RM-194 Field Modification Kit and the transmitter may now be put into operation as explained in the Instruction Book for Radio Transmitting Set AN/FRT-15. The interconnection diagram, page 3-11, 12, 13, and 14 should be corrected after the Radio Transmitting Set has been modified.

2. INSTALLATION PROCEDURE. (con't)

(c) Release switches one at a time and check that Ohmmeter reads zero.

(d) Push open both HV shorting switches located in the Radio Modulator Group.

(e) Measure the resistance between ground and terminal No. 24 of terminal board TB-1502. This reading should be approximately 7000 ohms.

(f) Repeat part (c) above.

(g) Push open both shorting switches located inside the Power Supply Group at the top.

(h) Measure the resistance between ground and the bottom side of resistor R-2508. This reading should be approximately 83,000 ohms.

(i) Measure the resistance between ground and meter connection M-2702. This reading should be approximately 8000 ohms.

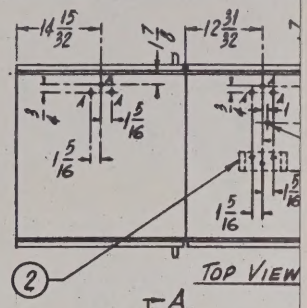
(j) Repeat part (c) above.

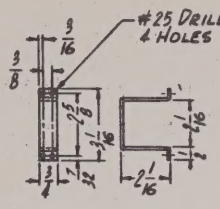
Step #9. Open all doors and remove rectifier shield panel. All shorting switches are now closed. With Ohmmeter check all connections for continuity.

This completes the installation of the RM-194 Field Modification Kit and the transmitter may now be put into operation as explained in the Instruction Book for Radio Transmitting Set AN/PRT-15. The interconnection diagram, page 3-11, 12, 13, and 14 should be corrected after the Radio Transmitting Set has been modified.

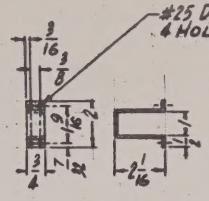
D-50196

SUB NUMBERS
DATE 3-1-54 SUB. 0

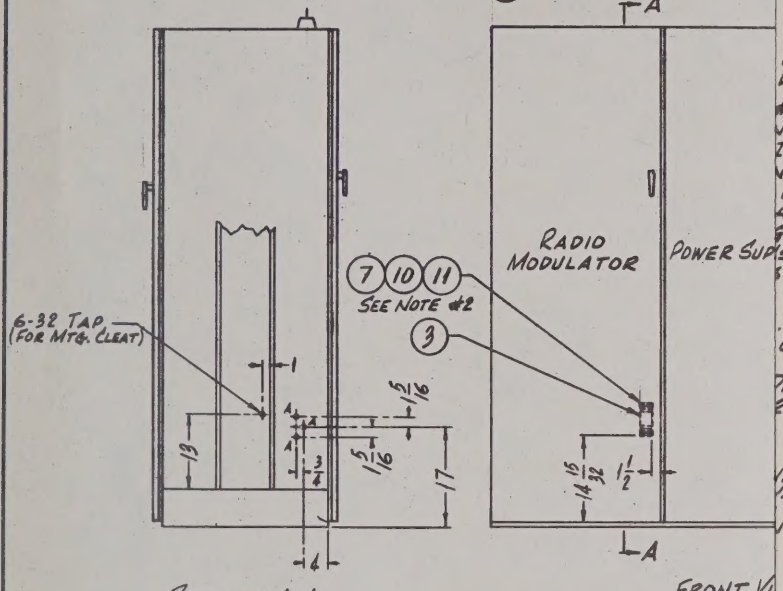




DETAIL #2



DETAIL #3



SECTION A-A

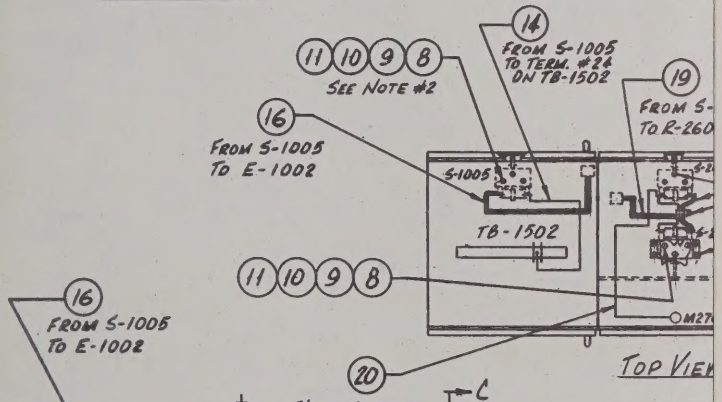
DETAIL #1, 3/32 C.R.S.
DETAILS #2 & #3, 1/16 C.R.S.

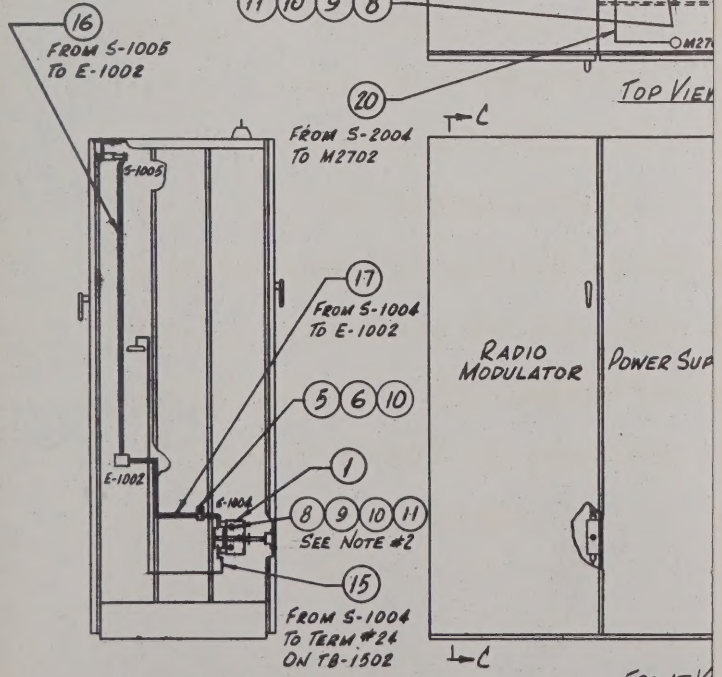
#3
ND BONDERIZE IN ACCORDANCE
I OF JAN-C-490
NC CHROMATE PRIMER IN
WITH JAN-P-735
ALKYD RESIN BASE GRAY ENAMEL
TO TYPE C OF NAVY SPEC. 52E4
SELL COLOR RATING OF N-4.5
RANGE OF 25 TO 40 UNITS

.0005 THICK IN ACCORDANCE WITH
QQ-P-416 & WATER DIP LACQUER

RILLED TO FIT MOUNTING
2 & #3

ERMAN PROD. INC.,
OR EQUAL
SCREW HEADS TO
ID CONNECTIONS





SECTION C-C

ITEM NO.	DRAWING & PART NOS.	NO. REQ'D.	TITLE	REMARKS
21	B-31175-8	1	WIRE, #8	
20	B-31176-7	1	WIRE, #7	
19	B-31175-6	1	WIRE, #6	
18	B-31176-5	1	WIRE, #5	
17	B-31175-4	1	WIRE, #4	
16	B-31175-3	1	WIRE, #3	
15	B-31176-2	1	WIRE, #2	
14	B-31176-1	1	WIRE, #1	
13	B-31633	1	CABLE, "B"	
12	B-31605	1	CABLE, "A"	
11		35	NUT, 6/32 HEX.	N.P. BRASS
10		37	LOCKWASHER, #6 SPLIT	N.P. BRONZE
9		18	WASHER, FLAT	#6 - 5/16 O.D. - 1/32 THK. N.P. BRASS
8		18	SCREW, 6/32 x 7/16 LG.	NP BIND HBM
7		17	SCREW, 6/32 x 3/8 LG.	NP BIND HBM
6		2	SCREW, 6/32 x 1/4 LG	NP RHBM
5		3	CLEAT, #3044-2	SEE NOTE #1
4		2	DETAIL #3	
3		1	DETAIL #2	
2		1	DETAIL #1	
1	TS-2166	6	SHORTING DEVICE	

KEY
A - #16 DRILL

RM-194
H.V. SHORTING DEVICE KIT INSTALLATION

RADIOMARINE CORP. OF AMERICA
ENGINEERING DEPT. NEW YORK, N. Y.

DRAWN	CH'K'D	APP'D
M.K.	A.R.	B.A.
DATE 3-1-54	3-1-54	3-1-54

SCALE 1/16 = 1

D-50196

SCALE THIS DRAWING

TOLERANCES UNLESS OTHERWISE SPECIFIED—
FRACTIONAL ± 1/64'; DECIMAL ± .005'; ANGULAR ± 1/4°

C. S. CO., NO. 679-1-60 1M

2. INSTALLATION PROCEDURE. (con't)

(c) Release switches one at a time and check that Ohmmeter reads zero.

(d) Push open both HV shorting switches located in the Radio Modulator Group.

(e) Measure the resistance between ground and terminal No. 24 of terminal board TB-1302. This reading should be approximately 7000 ohms.

(f) Repeat part (c) above.

(g) Push open both shorting switches located inside the Power Supply Group at the top.

(h) Measure the resistance between ground and the bottom side of resistor R-2608. This reading should be approximately 83,000 ohms.

(i) Measure the resistance between ground and meter connection M-2702. This reading should be approximately 8000 ohms.

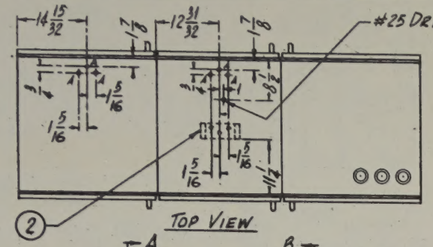
(j) Repeat part (c) above.

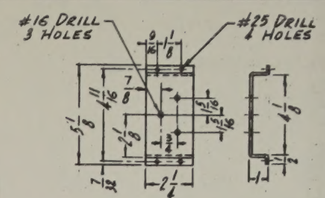
Step #9. Open all doors and remove rectifier shield panel. All shorting switches are now closed. With Ohmmeter check all connections for continuity.

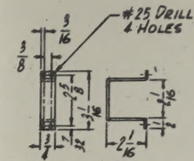
This completes the installation of the RM-194 Field Modification Kit and the transmitter may now be put into operation as explained in the Instruction Book for Radio Transmitting Set AN/TRT-15. The interconnection diagram, page 3-11, 12, 13, and 14 should be corrected after the Radio Transmitting Set has been modified.

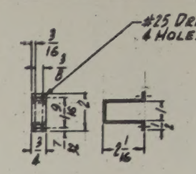
D-50196

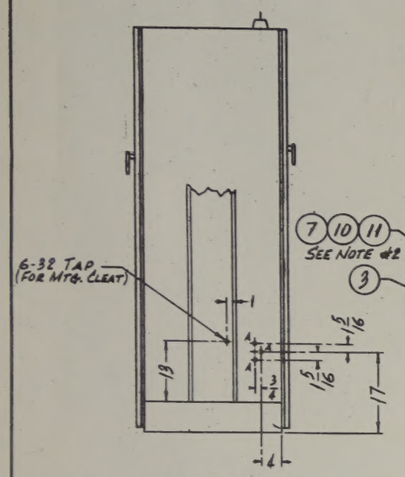
SUB NUMBERS
DATE 3-1-54 SUB. 0

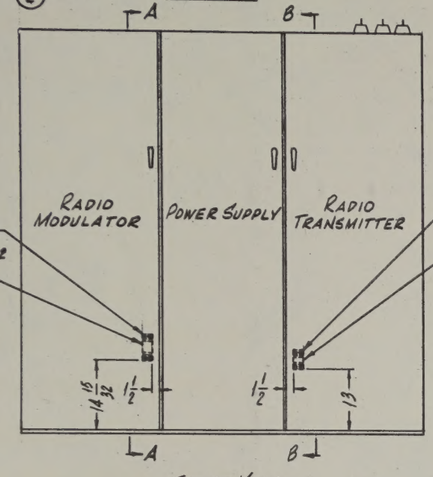


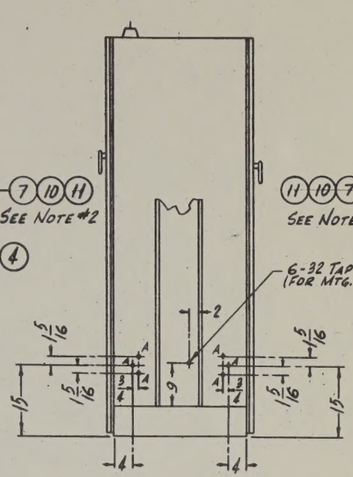


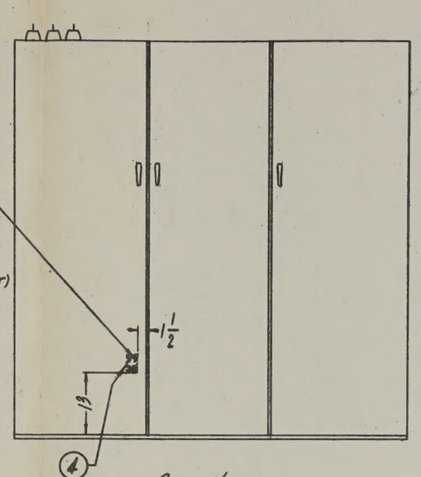












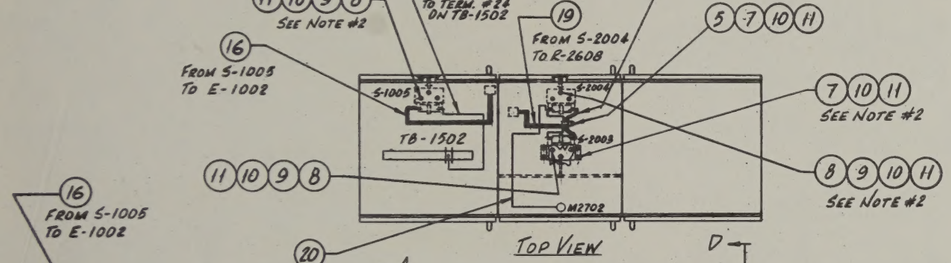
NOTE - MATERIAL FOR DETAIL #1, 3/32 C.R.S.
MATERIAL FOR DETAILS #2 & #3, 1/16 C.R.S.

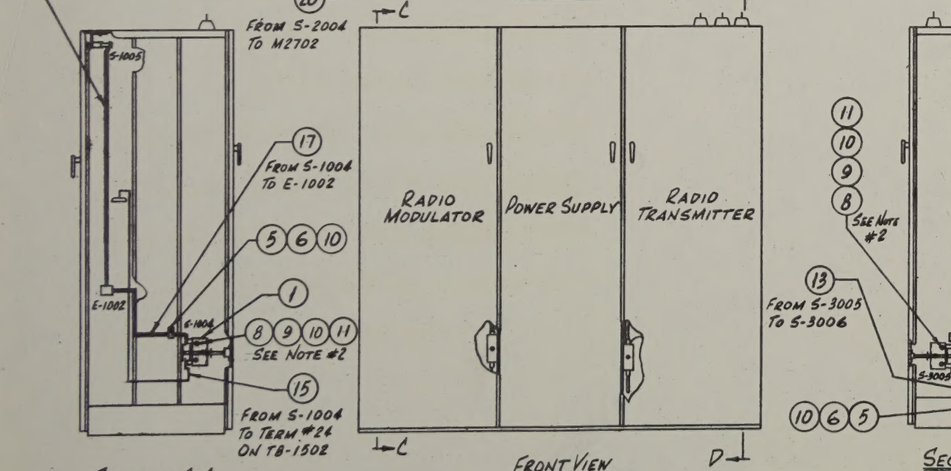
FINISH - FOR DETAILS #2 & #3
1- DEGREASE AND BONDERIZE IN ACCORDANCE WITH GRADE I OF JAN-C-490
2- ONE COAT ZINC CHROMATE PRIMER IN ACCORDANCE WITH JAN-P-735
3- TWO COATS ALKYD RESIN BASE GRAY ENAMEL CONFORMING TO TYPE C OF NAVY SPEC. 52E4 WITH A MUNSELL COLOR RATING OF N-6.5 AND A GLOSS RANGE OF 25 TO 40 UNITS

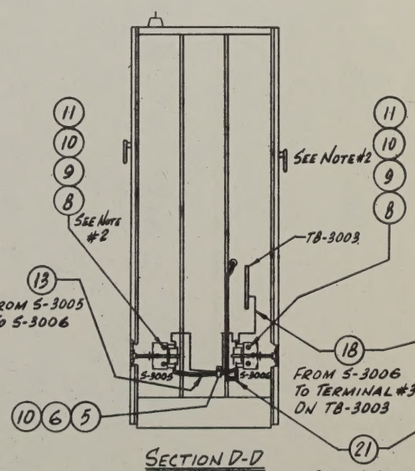
FINISH - FOR DETAIL #1
1- CADMIUM PLATE .0005 THICK IN ACCORDANCE WITH FEDERAL SPEC. QQ-P-416 & WATER DIP LACQUER

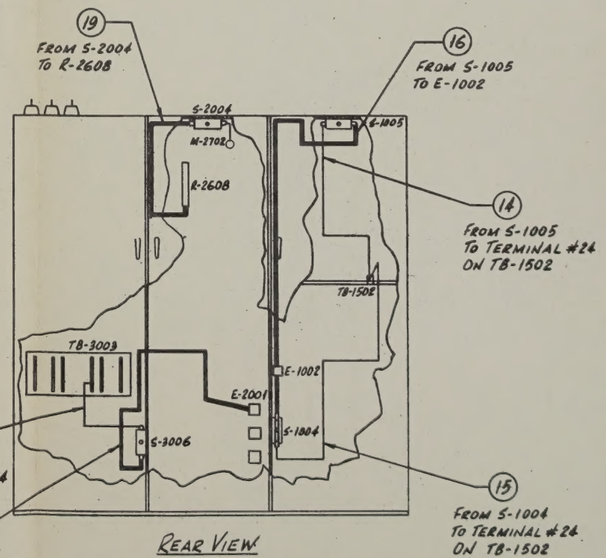
DOORS & CABINETS TO BE DRILLED TO FIT MOUNTING HOLES IN DETAILS #1, #2 & #3

NOTES-
1- AS SUPPLIED BY TINNERMAN PROD. INC., NEW ROCHELLE, N.Y. OR EQUAL
2- REMOVE PAINT UNDER SCREW HEADS TO PROVIDE GOOD GROUND CONNECTIONS









ITEM NO.	DRAWING & PART NOS.	NO. REQ'D.	TITLE	REMARKS
21	B-31175-8	1	WIRE, #8	
20	B-31176-7	1	WIRE, #7	
19	B-31175-6	1	WIRE, #6	
18	B-31176-5	1	WIRE, #5	
17	B-31175-4	1	WIRE, #4	
16	B-31175-3	1	WIRE, #3	
15	B-31176-2	1	WIRE, #2	
14	B-31176-1	1	WIRE, #1	
13	B-31633	1	CABLE, "B"	
12	B-31605	1	CABLE, "A"	
11		35	NUT, 6/32 HEX.	N.P. BRASS
10		37	LOCKWASHER, #6 SPLIT	N.P. BRONZE
9		18	WASHER, FLAT	#6 x 3/16 O.D. x 1/32 THK. N.P. BRASS
8		18	SCREW, 6/32 x 7/16 LG.	NP BIND HBM
7		17	SCREW, 6/32 x 3/8 LG.	NP BIND HBM
6		2	SCREW, 6/32 x 1/4 LG.	NP RH BM
5		3	CLEAT, #3044-2	SEE NOTE #1
4		2	DETAIL #3	
3		1	DETAIL #2	
2		1	DETAIL #1	
1	TS-2166	6	SHORTING DEVICE	

KEY
A - #16 DRILL

RM-194
H.V. SHORTING DEVICE KIT INSTALLATION

RADIOMARINE CORP. OF AMERICA
ENGINEERING DEPT. NEW YORK, N. Y.

DRAWN	CH'K'D	APP'D
M.K.	A.R.	B.A.
DATE 3-1-54	3-1-54	3-1-54

SCALE 1/16 = 1

D-50196

DO NOT SCALE THIS DRAWING

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

TOLERANCES UNLESS OTHERWISE SPECIFIED— FRACTIONAL ± 1/64"; DECIMAL ± .005"; ANGULAR ± 1/4°

C. D. CO., NO. 272-1-60 1000